



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/742,344	12/19/2003	Karl Lintner	SEDERM 3.0-002	6240
530 7590 04/28/2008 LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK 600 SOUTH AVENUE WEST WESTFIELD, NJ 07090			EXAMINER NIEBAUER, RONALD T	
			ART UNIT 1654	PAPER NUMBER
			MAIL DATE 04/28/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/742,344

Applicant(s)

LINTNER ET AL.

Examiner

RONALD T. NIEBAUER

Art Unit

1654

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-68 is/are pending in the application.
- 4a) Of the above claim(s) 22-24, 29, 30, 33, 35, 37, 45, 59 and 66-68 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-21, 25-28, 31, 32, 34, 36, 38-44, 46-58 and 60-65 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Final Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Applicants amendments and arguments filed 1/22/08 are acknowledged and have been fully considered. Any rejection and/or objection not specifically addressed is herein withdrawn.

Claims 1-11 have been cancelled. Claims 12,16,21,25,28,31,32,34,36 have been amended. Claims 39-68 have been added as new claims.

As noted previously Applicant's election of the species of n-stearoyl-dihydrosphingosine (also known as n-stearoyl-sphinganine) for the ceramide; surfactant for the additional ingredient; Biot-VGVAPG for the polypeptide; and solution for the form in the reply filed on 6/5/07 is acknowledged.

Claims 22,23,24,29,30,33,37 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 6/5/07. Specifically, the claims are withdrawn as being drawn to a nonelected additional ingredient (claims 22,30), polypeptide (claims 23,24,29,37), or form (claim 33).

It is noted that although claim 35 was included in the previous examination it is properly withdrawn (the ceramide of claim 35 includes a carbon carbon double bond while the elected species does not) as noted by the applicant. Applicant has also acknowledged that new claims 45,59,66-68 are drawn to non-elected species.

Claims 35,45,59,66-68 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Specifically, the claims are withdrawn as being drawn to a nonelected ceramide (claims

35,45,59 in which ceramide includes a carbon carbon double bond) or polypeptide (claims 66-68).

Claims 12-21,25-28,31-32,34,36,38-44,46-58,60-65 are under consideration.

In the course of searching for the elected species other prior art to nonelected species was uncovered and is cited herein. It is noted that the claims have been examined with regard to the elected species, not the complete genus of species claimed. Compliance with, for example, 35 USC 112 1st paragraph (written description) has only been considered with regard to the elected species and not to the complete genus of species claimed.

Specification

The disclosure remains objected to because of the following informalities:

The use of the trademarks (such MATRIXYL page 2) has been noted in this application. It should be capitalized and include a proper trademark symbol such as TM of © following the word wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Appropriate correction is required.

Response to Arguments - specification

Applicants argue that the trademarks are already capitalized.

Applicant's arguments filed 1/22/08 have been fully considered but they are not persuasive.

A proper trademark symbol such as TM of © remains missing from the trademarks in the instant specification.

Claim Objections

Claims 25,39 are objected to because of the following informalities:

Claims 25 and 39 as amended recite '(w/w/)*'. There is an extra backslash present.

Appropriate correction is required.

Art Rejections

Applicants amendments have overcome the outstanding 102 rejection. The 103 rejection is maintained for numerous claims as cited below. Since numerous claims have been amended and new claims have been added the rejection is rewritten below in the context of the instant claims using the same references as in the previous rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 12-21,25-28,31-32,34,36,38-44,46-58,60-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seiberg et al. (US 2002/0197219 as cited in IDS), Lintner (US 6,620,419), and Cauwet-Martin et al. (US 5,830,481).

Seiberg teach peptide compositions (claim 1) including peptides (section 0017) such as H₂-Val-Gly-Val-Ala-Pro-Gly-NH₂ and Palmitoyl-Val-Gly-Val-Ala-Pro-Gly-OH (claim 3), for cosmetic applications. The peptide Palmitoyl-Val-Gly-Val-Ala-Pro-Gly-OH meets the structural limitations of the peptide of claims 12-21,25-28,31-32,34,36,38-44,46-58,60-65 of the instant invention.

The composition of Seiberg includes at least one other ingredient, a pigment (claim 1) as recited in claim 12,21,25,28,36 of the instant invention.

Seiberg teach that the topical composition can further comprise surfactants (section 0051) as recited in claim 34 of the instant invention.

Seiberg teach that the composition can be in the form of a solution (section 0034-0035) as recited in claim 32 of the instant invention.

Seiberg teach that the topical composition can further comprise ceramides and surfactants that will typically be present in an amount from about 0.001% to about 20% (section 0051-0052). Seiberg state that unless otherwise indicated the percentages refer to percentage by weight (% w/w) (section 0007). Seiberg teach that the amount of peptide ranges from 0.001%-10% by weight (section 0030). In the examples, Seiberg teach that the peptides were tested at 250uM and 500 uM (section 0068). Seiberg teach a topical administration of the peptide containing composition to the skin (claim 15, section 0066). Specifically, compositions were applied topically twice a day for multiple weeks (section 0066).

The difference between the teachings of Seiberg and the instant claims, is that Seiberg does not teach the specific ceramides such as n-stearoyl-dihydrosphingosine or the particular ratios between ceramide and the peptide.

Cauwet-Martin teach a cosmetic composition containing a ceramide (claim 1). Cauwet-Martin teach that ceramides are known to protect and/or repair the skin (column 1 line 20-24). Cauwet-Martin specifically teach the ceramide n-stearoyl-dihydrosphingosine (also known as n-stearoyl-sphinganine) (claim 1) thus meeting the structural limitations of the ceramide of claims 12-21,25-28,31-32,34,36,38-44,46-58,60-65 of the instant invention. Cauwet-Martin teach the use of surfactants in the composition (column 6 line 40-45), use as a solution (claim 1), and a composition containing at least one other ingredient such as water. Cauwet-Martin teach the

ceramide at 0.0001% to 15% (column 4 line 57-59) and more specifically 0.0001 to 10% and 0.0001 to 5% in claims 5-6. In example 2 (column 8) the ceramide is taught at 0.1% and in example 6 (column 9) the ceramide is taught at 10%.

Taken together, it would have been obvious to one of skill in the art to use the prior art elements taught by Seiberg, and Cauwet-Martin because the ingredients are all used for cosmetic compositions. One would have had a reasonable expectation for success since the elements are disclosed for the same use as cosmetics.

In particular Seiberg teach peptide compositions (claim 1) including peptides (section 0017) such as Palmitoyl-Val-Gly-Val-Ala-Pro-Gly-OH (claim 3). Seiberg teach that the amount of peptide ranges from 0.001%-10% by weight (section 0030). In the examples, Seiberg teach that the peptides were tested at 250uM and 500 uM (section 0068). Seiberg teach that the topical composition can further comprise ceramides that will typically be present in an amount from about 0.001% to about 20% (section 0051-0052). Seiberg teach a topical administration of the peptide containing composition to the skin (claim 15, section 0066).

Cauwet-Martin teach that ceramides are known to protect and/or repair the skin (column 1 line 20-24). Cauwet-Martin teach the ceramide at 0.0001% to 15% (column 4 line 57-59) and more specifically 0.0001 to 10% and 0.0001 to 5% in claims 5-6. In example 2 (column 8) the ceramide is taught at 0.1% and in example 6 (column 9) the ceramide is taught at 10%.

Since Seiberg teach the use of ceramides one would be motivated to use ceramides. Since Cauwet-Martin teach that ceramides are known to protect and/or repair the skin (column 1 line 20-24) one would be motivated to use the ceramides (such as n-stearoyl-dihydrosphingosine as

described in claim 1) in the compositions of Seiberg which are applied to the skin (claim 15, section 0066).

As such, one would be motivated to combine the peptides as taught by Seiberg with the ceramides as taught by Cauwet-Martin. Cauwet-Martin teach the ceramide at 0.0001% to 15% (column 4 line 57-59) and more specifically 0.0001 to 10% and 0.0001 to 5% in claims 5-6. In example 6 (column 9) the ceramide is taught at 10%.

Seiberg teach that the amount of peptide ranges from 0.001%-10% by weight (section 0030) meeting the peptide range set in claims 12,25,28,31,39,53 of the instant invention. In the examples, Seiberg teach that the peptides were tested at 250uM and 500 uM (section 0068).

For the combination one would be motivated to begin with the specific example recited by Cauwet-Martin (example 6 columns 9-10) in which the ceramide is at 10% in a quantity of water sufficient for 100g (i.e. final volume of ~100ml). Such ceramide concentration (i.e. ~10%) meets the limitations of claims 48,49,62,63 of the instant invention. To such a composition one would be motivated to add Palmitoyl-Val-Gly-Val-Ala-Pro-Gly-OH as taught by Seiberg at 250uM as in the example (section 0068). Using an estimated molecular weight of 750g/mol for the peptide of Seiberg the estimated amount of peptide is 187.5ppm ($250\mu\text{M} \times 0.1\text{L} \times 500\text{g/mol} \times \text{mol}/10^6\mu\text{mol} = 0.01875\text{g}$; $0.01875/100 = 0.0001875 = 187.5\text{ppm}$ or 0.01875%) thus meeting the peptide limitations cited in claims 36,38 for example. As such the ratio of polypeptide to said ceramide is (10% to 0.01875% or 1:533) thus meeting the limitations recited in claims 17-18,46-47,60-61 of the instant invention and the limitation that said ceramide be in amount that is greater than said polypeptide as recited in claims 12,25,28,39,53 of the instant invention. Further, since Cauwet-Martin teach the ceramide at 0.0001% to 15% (column 4 line 57-59) and more

specifically 0.0001 to 10% and 0.0001 to 5% in claims 5-6 and 0.1% in example 2 (column 8) one would be motivated to use the other concentrations of ceramide such as 0.1% as recited in example 2 thus meeting the limitations of claims 50-51,65-65 of the instant inventions. Since claim 6 recites concentrations up to 5% one would be motivated to use 5% thus meeting the limitations of claim 36,38 for example. Further, it would have been obvious to one skilled in the art at the time of invention to determine all optimum and operable conditions (e.g. concentrations/ratios), because such conditions are art-recognized result-effective variables that are routinely determined and optimized in the art through routine experimentation. ("[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). See MPEP § 2145.05).

It has been recently held that "Neither §103's enactment nor *Graham's* analysis disturbed the Court's earlier instructions concerning the need for caution in granting a patent based on the combination of elements found in the prior art." *KSR v. Teleflex*, 550 U.S. ___, 82 USPQ2d 1385, 1389 (2007). The KSR court stated that "a combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." KSR at 1389.

Furthermore, The KSR court concluded that "obvious to try" may be an appropriate test under 103. The Supreme Court stated in *KSR*

When there is motivation

"to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under § 103." *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, ___, 82 USPQ2d 1385, 1397 (2007).

In the instant case all the claimed elements were known (specific peptide and peptide concentrations as taught by Seiberg; specific ceramide and ceramide concentrations as taught by Cauwet-Martin) in the art as discussed above and one skilled in the art could have combined the elements by known methods and the combination would have yielded predictable results. From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references.

It is noted that claims 25,53 and dependent claims are drawn to methods of prevention. Since a method of prevention is used on a patient population prior to the onset of the ailment/disorder, any patient population is available for preventative administrations. In the instant case, Seiberg teach a topical administration of the peptide containing composition to the skin (claim 15, section 0066) meeting the active step of the instant claims.

It is noted that claim 12 recites 'having anti-aging activity' and that claims 16 and 52 for example recite 'ability to treat or prevent wrinkles'. In the instant case Seiberg teach peptides that meet the structural limitations of the claims. Since products of identical compositions can not have mutually exclusive properties (MPEP section 2112.01) the properties are necessarily present in the peptides of Seiberg.

It is noted that Seiberg does not teach biotinylated peptides like the elected peptide. However, the peptides taught by Seiberg read on instant claims such that claims 12-21,25-28,31-

32,34,36,38-44,46-58,60-65 are unpatentable over Seiberg et al. (US 2002/0197219 as cited in IDS), and Cauwet-Martin et al. (US 5,830,481).

Lintner teach cosmetic compositions of peptides (claim 4). The peptides include chemical modifications at the N-terminus to enhance their activity, stability and to increase their lipophilicity (abstract). Examples of such modifications include addition of a palmitoyl group (claim 1) or a biotin group (claim 4).

Since Seiberg teach a peptide with a palmitoyl group (claim 3) it would have been obvious to substitute the biotin group for the palmitoyl group. The claim would have been obvious because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Response to Arguments 103 rejection

Since the claims have been amended and new claims have been added, a rejection adapted to the claims is recited above using the same references as in the previous rejection.

Applicants argue that Seiberg does not teach or suggest the ranges of polypeptides claimed and does not support the claimed ratios of ceramide to polypeptide and that the other references fail to cure the deficiencies. Applicants argue that while the amounts may overlap, Seiberg does not teach the full range as claimed, for example, in claim 12. Applicants argue that Cauwet-Martin teaches away from the claimed invention. In particular, Cauwet-Martin teach that the ceramide is provided in an amount that is greater than the polypeptide.

Applicant's arguments filed 1/22/08 have been fully considered but they are not persuasive.

As discussed above Seiberg teach that the amount of peptide ranges from 0.001%-10% by weight (section 0030). In the examples, Seiberg teach that the peptides were tested at 250uM and 500 uM (section 0068). As discussed above when combined with Cauwet-Martin the estimated amount of peptide is 187.5ppm ($250\text{uM} \times 0.1\text{L} \times 500\text{g/mol} \times \text{mol}/10^6\text{umol} = 0.01875\text{g}$; $0.01875/100 = 0.0001875 = 187.5\text{ppm}$ or 0.01875%). As such, the peptide limitations of claim 12 (as well as the other claims) are met. Although applicant argues that the full range, for example, in claim 12 is not taught, section 2131.03 of the MPEP discuss anticipation of ranges and section 2144.05 of the MPEP teach obviousness of ranges. Section 2131.03 teach that a specific example in the prior art which is within a claimed range anticipates that the range. As such, teaching the 'full range' (i.e. 0.00001%-10%) as asserted by applicant is not necessary. Section 2144.05 of the MPEP states: "In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists." As such, since Seiberg teach that the amount of peptide ranges from 0.001%-10% by weight (section 0030) and the example combined with Cauwet-Martin teach the peptide at 0.01875% the claim limitations of for example, of about 0.00001% to about 10% as recited in claim 12 are met.

As discussed above the peptide:ceramide ratios include 10% to 0.01875% or 1:533 thus meeting the limitations recited in claims 17-18,46-47,60-61 of the instant invention and the limitation that said ceramide be in amount that is greater than said polypeptide as recited in claims 12,25,28,39,53 of the instant invention.

Regarding the argument that Cauwet-Martin constitutes a teaching away it is noted that the claims are drawn to the ratio between a specific peptide (not any peptide) and the ceramide. In the instant case, the rejection is a multiple reference rejection relying on components of

Seiberg (the specific peptide for example) and components of Cauwet-Martin (the specific ceramide for example). Instant claim 28 is drawn to a peptide of a particular sequence and the claim states that the amount is in relation to said polypeptide. Although Cauwet-Martin disclose the use of other polypeptides such components are permissible in the compositions as claimed. It is noted that claim 12 for example recites that the composition comprises at least one polypeptide. In accord with section 2111.03 of the MPEP 'comprises' is to be interpreted as open-ended language. As such additional components are permissible in the composition. Further, claim 12 recites at least one polypeptide so more than one polypeptide is permissible. If there are other polypeptides present, the claimed ratios are between the claimed polypeptide (for example the peptide of formula I of claim 28) and the ceramide. Although Cauwet-Martin compare a ratio of wool keratin hydrolysate to ceramide, such ratio is not the ratio that is being claimed. In the instant case the appropriate ratio involves the peptide of Seiberg and the ceramide of Cauwet-Martin (i.e. 1:533). As such Cauwet-Martin does not constitute a teaching away.

It is noted that section 2144.05 III of the MPEP discuss rebuttal of ranges. However, applicant has not convincingly rebutted the obviousness rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RONALD T. NIEBAUER whose telephone number is (571)270-3059. The examiner can normally be reached on Monday-Thursday, 7:30am-5:00pm, alt. Friday, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang can be reached on 571-272-0562. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 1654

/Ronald T Niebauer/
Examiner, Art Unit 1654

/Anish Gupta/

Primary Examiner, Art Unit 1654